

## CLAIMS

1. An industrial robot having a joint,

5            wherein the joint includes a first member, and a second member  
rotatable relatively to the first member,

             wherein the first member is provided with a first hole, and the  
first member includes:

                 a first positioning member contained in the first hole,  
10    slidable through an inside of the first hole, and projectable from the  
first hole; and

                 a first attaching part that fixes the first positioning  
member at a bottom of the first hole,

             wherein the second member includes an interacting means  
15    interacting with the first positioning member when the first  
positioning member is projected from the first hole, and

             wherein the first positioning member includes a retainer of a  
lubricant on a side thereof.

20    2. An industrial robot having a joint,

             wherein the joint includes a first member, and a second member  
rotatable relatively to the first member,

             wherein the first member is provided with a first hole, and the  
first member includes:

25            a first positioning member contained in the first hole,  
slidable through an inside of the first hole, and projectable from the  
first hole; and

a first attaching part that fixes the first positioning member at a bottom of the first hole,

wherein the second member includes an interacting means interacting with the first positioning member when the first positioning member is projected from the first hole, and

wherein the first positioning member includes a first marker on a side thereof, and the first marker specifically indicates a projection length of the first positioning member.

3. The industrial robot as claimed in claim 2, wherein the first positioning member further includes a retainer for a lubricant on a side thereof.

4. The industrial robot as claimed in claim 2, wherein the first marker is a ring-shaped groove.

5. The industrial robot as claimed in one of claims 1 and 2,

wherein the interacting means is a projection on a side of the second member, and

wherein the projection is formed at a position where the projection can contact the first positioning member when the first positioning member is projected.

6. The industrial robot as claimed in one of claims 1 and 2,

wherein the interacting means includes:

a member having a second hole formed on the second member;

a second positioning member contained in the second hole, slidable through an inside of the second hole, and projectable from the second hole; and

a second attaching part fixing the second positioning  
5 member at a bottom of the second hole, and

wherein the second positioning member can contact the first positioning member when both the first projecting member and the second projecting member are projected..

10 7. The industrial robot as claimed in claim 6,

wherein the second positioning member includes a second marker on a side thereof, and the second marker specifically indicates a projection length of the second positioning member.

15 8. The industrial robot as claimed in claim 7, wherein the second marker is a ring-shaped groove.

9. The industrial robot as claimed in claim 4, wherein the ring-shaped groove retains the lubricant.

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10. The industrial robot as claimed in claim 8, wherein the ring-shaped groove retains the lubricant.

11. The industrial robot as claimed in one of claims 1 and 2, wherein  
25 the entire first positioning member is contained in the first hole when the joint performs a regular action, and the first positioning member is projected from the first hole when the joint performs origin

adjustment.

12. The industrial robot as claimed in one of claims 1 and 2, wherein  
the first positioning member interacts at a position of a mechanical  
5 origin of the joint.

13. The industrial robot as claimed in one of claims 1 and 2, further  
comprising a calculating means,

wherein the first positioning member interacts at a position  
10 displaced by a given angle from a position of a mechanical origin of the  
joint, and

wherein the calculating means calculates the position of the  
mechanical origin using the given displacement angle and the  
interaction position of the positioning member.

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14. The industrial robot as claimed in one of claims 1 and 2, further  
comprising a control unit,

wherein the joint further includes a driving motor for relatively  
rotating the first member and the second member, and

20 wherein the control unit monitors torque owing to a current of  
the motor and judges presence or absence of interaction of the first  
positioning member.